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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,217	11/01/2001	Craig Nemecek	CPPR-CD01207M	1780

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EXAMINER	
PROCTOR, JASON SCOTT	
ART UNIT	**PAPER NUMBER**
2123	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/002,217	NEMECEK, CRAIG	
	Examiner	Art Unit	
	Jason Proctor	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-20 were rejected in office action of 3 April 2006.

Applicants' response of 8 January 2007 submits claims 1-20 for reconsideration.

Claims 1-20 are rejected.

Priority

1. This Application contains a claim for the benefit of priority to U.S. Provisional Application No. 60/243,708 filed 26 October 2000. The provisional application has been reviewed and priority is denied, because the provisional application does not appear to enable the claimed invention as required under 35 U.S.C. Section 112, first paragraph. See 35 U.S.C. § 119(e)(1).

For example, the provisional application contains a set of 'powerpoint-style' drawings and datasheets describing desired features for a microcontroller or a 'system-on-chip,' but this material does not appear to contain either the text description or the drawings found in the Application. In particular, no part of the provisional application appears to disclose the method steps shown in the Application at Fig. 7.

Claim Interpretation

2. The Examiner thanks Applicants in the submission of 10 July 2006 for clarification regarding the intended interpretation of the claim language. Specifically, Applicants submit that:

> Claim 1 specifically invokes 35 U.S.C. § 112, sixth paragraph, and should be interpreted in light of the entire specification and equivalent thereof and not in light of other claims as suggested by the rejection.

The Examiner has fully considered this argument and finds it fully persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-20 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claims 1, 6, and 14 have been amended to recite a limitation comprising "computing a conditional jump address prior to receipt of said conditional jump instruction" which was not described in the application as filed.

In contrast to the claimed invention, the specification describes that "the virtual microcontroller pre-calculates the jump address and makes the jump decision after receipt of the I/O read data" (page 5, line 1-4; also lines 11-14; also lines 21-23; also page 5, line 30 – page 6, line 2).

In contrast to the claimed invention, the specification at page 27, lines 5-12, describes that:

> In order to overcome this problem, the virtual microcontroller always assumes that a jump condition is true and computes the target jump location as if the condition requiring the jump has been satisfied. This permits **the virtual microcontroller to compute the target jump location as the I/O data is being received**. Just before the actual jump is performed, the virtual microcontroller 220 has time to evaluate the conditional jump and then, depending on the outcome of the evaluation, either use the pre-computed jump

information if the condition is true or simply increment the program counter if the jump condition fails. (emphasis added)

The application does not describe a system or method wherein the virtual microcontroller computes a conditional jump address prior to receipt of **a conditional jump instruction** as claimed. In contrast, the application describes a system or method wherein the virtual microcontroller computers a conditional jump address prior to receipt of **I/O data**.

4. Claims 1-20 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 1, 6, and 14 have been amended to recite a limitation comprising "computing a conditional jump address prior to receipt of said conditional jump instruction" which does not enable a person skilled in the art to make and/or use the invention.

Where a processor has not received an instruction (*"prior to receipt of said conditional jump instruction"*) it is clearly not possible to perform calculations dependent upon that instruction (*"computing a conditional jump address"*). By way of analogy, a student cannot **compute the result of a homework problem** until she has **received the homework problem**, and likewise a processor cannot **compute a conditional jump address** until it has first received **the conditional jump instruction**.

As noted above, the application does not provide adequate written description for this claimed feature, which further contributes to the lack of enablement.

Claims rejected but not specifically mentioned stand rejected by virtue of their dependence.

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 recites "a virtual microcontroller" and a "microcontroller" "executing the same instructions," and "the virtual microcontroller [has] means for detecting an I/O read instruction followed by a conditional jump instruction." The claim later recites "receipt of said conditional jump instruction from the microcontroller" which renders the claim vague and indefinite. The antecedent basis for "said conditional jump instruction" is "a conditional jump instruction" detected by the virtual microcontroller. Therefore "said conditional jump instructions" is one of the instructions executed or to be executed by the virtual microcontroller, however the claim language requires that the microcontroller transmits "said conditional jump instruction" to the virtual microcontroller. It appears, from the claim language, that "said conditional jump instruction" simultaneously refers to an instruction in the virtual microcontroller as well as in the microcontroller.

6. Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP

§ 2172.01. The omitted steps are: the microcontroller transmitting "said conditional jump instruction" to the virtual microcontroller. The independent claims require that the virtual microcontroller receive "said conditional jump instruction," yet none of independent claims 1, 6, or 14 recites a step wherein the microcontroller transmits "said conditional jump instruction".

7. Claims 6-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 6 and 14 are directed to methods. These claims expressly recite "a method of handling conditional jumps in the virtual microcontroller, comprising:..." The body of these claims clearly define method steps. Dependent claims 7-13 and 15-20 refer to "the in-circuit emulation system of claim 6" (or of claim 14) and recite method steps. Claims 6 and 14 as written do not define in-circuit emulation system, but rather define methods. Therefore it is unclear whether Applicants intend to patent an in-circuit emulation system as suggested by dependent claims 7-13 and 15-20, or instead intend to patent a method as defined by the language of claims 6 and 14.

Claims rejected but not specifically mentioned stand rejected by virtue of their dependence.

Claim Rejections - 35 USC § 101

35 U.S.C. § 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-20 are rejected under 35 U.S.C. § 101 because the disclosed invention is inoperative and therefore lacks utility.

Independent claim 1 requires "computing a conditional jump address prior to receipt of said conditional jump instruction from the microcontroller" which is inoperable. This limitation requires computing the result of a computer instruction before the computer instruction is available.

Independent claims 6 and 14 recite similar limitations and are rejected for similar rationale.

9. Claims 6, 9-12, 14, and 17-20 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

Claim 6 (and similarly claim 14) define a method that does not produce a useful, concrete, and tangible result. These methods define steps of detecting, computing a conditional jump address, and determining ... whether to proceed. Such a determination is not a useful, concrete, and tangible result.

In contrast, claims 7 and 8 (15 and 16) positively recite executing an instruction based upon the determination. These claims establish a useful, concrete, and tangible result for the methods of the parent claim.

Claims rejected but not specifically mentioned stand rejected by virtue of their dependence.

In response, Applicants argue that:

> The recited limitation produces a tangible result because an in-circuit emulation system, which is tangible, performs a serious of steps [sic] for branch prediction in order to determine how the in-circuit emulation system should proceed. Accordingly, determining how the in-circuit emulation system should proceed results in a tangible result because the in-circuit emulation system can proceed accordingly or the result of the determination can be stored for later retrieval. Accordingly, the recited limitation produces a tangible result of the program flow is much more efficient due to branch prediction [sic].

The Examiner respectfully traverses this argument as follows.

Applicants have not claimed "proceeding accordingly" or "storing the result." The Examiner has **specifically noted** that claims 7 and 8 (15 and 16) positively recite executing an instruction based on the determination **and therefore claims 7 and 8 (15 and 16) are not subject to this ground of rejection under 35 U.S.C. § 101**. The rejected claims invention result in a determination, which is an abstract concept that lacks a practical application within the meaning of 35 U.S.C. § 101.

Regarding the "tangible" nature of an in-circuit emulation system, please see MPEP 2106(IV)(B). The question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to [...] but rather on the essential characteristics of the subject matter, in particular, its practical utility (*Id., quoting* State Street). In these claims, the method by which the in-circuit emulation system is clearly an essential characteristic of the subject matter. Claims 6 and 14 so far as to explicitly define "a method of handling conditional jumps". Therefore the "tangible" nature of the in-circuit emulation system is not sufficient to establish the claimed invention as statutory. Rather, the claimed method must be limited to a practical application.

10. The rejection of claim 13 under 35 U.S.C. § 101 is withdrawn in response to the amendments thereto.

Claim Rejections – 35 USC § 103

In response to the amendments to independent claims 1, 6, and 14, the previous rejections under 35 U.S.C. § 103 have been withdrawn. In particular, the prior art fails to teach or suggest "computing a conditional jump address prior to receipt of said conditional jump instruction" in combination with the other claimed elements, as recited by claims 1, 6, and 14.

Applicants' arguments regarding the prior art have been fully considered but are moot because the prior art rejections have been withdrawn in response to the amended claim language.

Potentially Allowable Subject Matter

None of claims 1-20 are rejected under 35 U.S.C. §§ 102 or 103. However, these claims are all rejected under 35 U.S.C. §§ 101 and 112. The claimed subject matter including the limitation "computing a conditional jump address prior to receipt of said conditional jump instruction", in combination with the other claimed elements recited by independent claims 1, 6, and 14, is neither taught nor suggested by the prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR)

system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor
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Art Unit 2123

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3/1/07

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